



EUROJÄRJESTELMÄ
EUROSYSTEMET

PRODUCT INFORMATION

Version 2.4.0

5.10.2009



Bank of Finland
PAYMENT AND
SETTLEMENT SYSTEM
SIMULATOR

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Product Information

Bank of Finland Payment and Settlement System Simulator

BoF-PSS2

The Bank of Finland Payment and Settlement System Simulator, version 2 (BoF-PSS2), is a powerful tool for payment and securities settlement system simulations. The simulator supports multiple system structures and various settlement models.

The simulator is designed for analysing liquidity needs and risks in payment and settlement systems. Special situations, often difficult or impossible to test in a real environment, can be readily simulated with BoF-PSS2. Thus, users can study how behavioral patterns and changes in policy and conventions impact the payment and settlement systems and participants. The efficiency of gridlock-resolution and liquidity-saving measures can be analyzed as well.

The application is divided into three sub-systems:

- Input sub-system for preparing and defining the input data,
- Execution sub-system for running simulations, and
- Output sub-system for basic analyses of simulation results.

Different settlement logics are implemented into separate algorithms. To replicate specific systems, appropriate algorithms must be selected with appropriate parameters. Different algorithm combinations can be used to replicate a large number of current and potential settlement conventions and structures. Real-time gross settlement systems (RTGS), continuous net settlement systems (CNS), deferred net settlement systems (DNS) and hybrid systems can be implemented with the simulator as well as securities settlement and multicurrency systems. Inter-system connections and bridges make it possible to define multi-system environments consisting of various types of interdependent systems. E.g. it is possible to replicate the interaction of RTGS and securities settlement systems.

Advanced users of BoF-PSS2 can define and build their own user modules/algorithms and expand the basic features of the simulator to analyse new types of settlement processes. It is also possible to implement agent based modeling by adding algorithms replicating the participants' behavior and decision making to control and alter the flow of submitted transactions. As a later addition, the simulator also has a network analysis module for generating networks and network indicators from either input data or results of simulations.

BoF-PSS2 has an easy to use graphical user interface. It is also possible to automate the use of the simulator via its command line interface (CLI).

5.10.2009

Technical Specifications

All input and output data are stored in separate MySQL -databases. Input data is imported to the input data database by using CSV files (comma-separated value files). Input templates make it possible to import data in any user-defined order. Several separator and time/date formats are supported. Data can also be imported directly to the MySQL database. The supported MySQL versions are: MySQL 4.1 and 5.0.

To run simulations a PC with Intel Pentium 4 class processor with at least 500 MB of main memory is required and a fast dual core processor together with 2 GB or more main memory is recommended. For simulations with millions of transactions or tens of thousands of participants, a 64 -bit version of the simulator should be used, which allows even larger amount of memory to be used.

The simulator runs on Microsoft Windows NT/2000 and Microsoft Windows XP. VISTA and Windows 7 haven't been tested. The simulator itself is JAVA application compliant with JRE 1.6.

User Support and Services

The software and documentation is designed to support independent use. Bank of Finland is organizing **Training** courses on the use of the simulator. **Consultation** service is also offered. **Help desk/Advisory service** is under development, with full rollout in Q1/2010. Tailor-made **Analysis** service is also provided. These services are fee-based and priced for cost recovery. For additional information see: BOF-PSS2 Supporting Services Descriptions and Fees.

Available documentation at simulator home pages www.bof.fi/sc/bof-pss:

- BOF-PSS2 Product Information
- BOF-PSS2 Ordering Instructions
- BOF-PSS2 Supporting Services Descriptions and Fees
- BOF-PSS2 User Manual
- BOF-PSS2 Descriptions of Databases and Files
- BOF-PSS2 Command Line Interface User Manual
- BOF-PSS2 User module development guide



5.10.2009

Licensing and distribution

The simulator can be freely applied to payment and settlement system research (see licensing and order form). The simulator is distributed in encrypted format over the Internet and includes installation packages for the simulator and the MySQL database. For more details see the Simulator Ordering Instructions document.

**For additional information please visit:
or E-mail to:**

www.bof.fi/sc/bof-pss
bof-pss@bof.fi